

STUDIES OF ACAMPTINI*
(COLEOPTERA: CURCULIONIDAE: COSSONINAE)

ELWOOD C. ZIMMERMAN

Division of Entomology, CSIRO, Box 1700,
Canberra, A.C.T., Australia 2601

ABSTRACT

A review of the literature and history of the classification of the Acamptini is given together with a key to the genera and an annotated list of the species. It is demonstrated that the Acamptini are Cossoninae and not Cryptorhynchinae as considered by some authors. *Pseudacamptus* Champion and *Glyphostethus* Marshall are reduced to synonyms of *Acamptus*. *Glyphostethus cancellatus* Marshall, *Pseudacamptus plurisetosus* Champion, and *Pseudacamptus texanus* Sleeper are transferred to *Acamptus*. *Acamptus cancellatus* Marshall, including the male and female genitalia, is illustrated for the first time, and it is concluded that the species is tropical American and has been introduced accidentally to Samoa and Fiji (recorded from the latter for the first time). A lectotype is selected for *Acamptus rigidus* LeConte. *Paracamptopsis* Hustache is excluded from the Acamptini, and it is noted that *Paracamptus* Casey, *Acamptoides* Champion and *Anchacamptus* Voss are Cryptorhynchinae and not Cossoninae as listed in *Coleopterorum Catalogus* and some other literature.

In 1921, Sir Guy Marshall described what he considered to be an unusual new genus and species of Samoan cossonine weevil, and he called it *Glyphostethus cancellatus*. It was based upon a single specimen found by Dr. Swale at Apia, Upolu, Western Samoa in 1916. Having not seen the unique holotype, the weevil was long a puzzle to me. When I went to Samoa in 1940, I tried hard to rediscover the species. In spite of extensive and intensive collecting, I found only 1 example, and it was captured near the end of my expedition. My specimen was found beneath the dead bark of *Hibiscus tiliaceus* at about 200 m. above Utulei, near Pago Pago, Tutuila, 24-VIII-1940. While studying my Samoan collection in 1943, I found, much to my great surprise, that *Glyphostethus* is the same as the American *Acamptus*. Later, when I was able to take my specimen to the British Museum to compare it with the holotype of *cancellatus*, I found that the type is a badly abraded specimen. Moreover, there are in the British Museum 2 Fijian specimens, one collected by R. Veitch at Labasa (Lambasa), Vanua Levu, VII-1922, and the other taken by H. S. Evans at Lomaloma, Vanua Levu. Although I made a very large collection of Curculionidae in Fiji in 1938, I did not collect the species in that archipelago. It is noteworthy that the above-mentioned 4 Pacific island specimens were collected singly at widely separated localities, and all of them were found at or near seaports. There appears no doubt that this species has been introduced to the Pacific from America. To strengthen further this conclusion, I can now also report that *cancellatus* is closely similar to the more recently described

*This is number 23 of a series of reports resulting from my project "Pacific Island Weevil Studies" begun under U. S. National Science Foundation Grant G-18933.

Acamptus verrucosus Voss from Colombia, South America. It is possible that *Acamptus cancellatus* was dispersed into the Pacific during the days of sailing ships, and we may expect to find it established in other localities on tropical Pacific islands. This recalls the discovery that the American *Anchonus duryi* Blatchley has been accidentally established in the Society and Gambier Islands in southeastern Polynesia as reported by me in 1964.

The taxonomic position of *Acamptus* has been the subject of considerable uncertainty. When LeConte described the genus in 1876, he erected the "Group Acampti" to receive it. He placed the Acampti in the "Tribe Cryptorhynchini" between his "Group Ithypori" and his "Group Cryptorhynchi". This was the equivalent of making the Acamptini a tribe of the Cryptorhynchinae. LeConte considered *Acamptus* an unusual weevil, and he characterized the group as follows:

"As *Camptorhinus* differs from the *Cryptorhynchi* by the pectoral groove being confined to the prosternum, though distinctly limited behind, so is the singular insect which constitutes this group similarly separated from the *Ithypori*, by the shorter beak resting upon the front coxae. The body is elongate, as in *Camptorhinus*, and the tibiae are stout, sinuate on the inner side, and strongly hooked at the tip. The other characters are peculiar, the tarsi are not dilated nor spongy beneath, and the club of the antennae is pubescent and sensitive only near the tip. [The latter character does not apply to all species now known.]

"These characters indicate relationships in various directions, such as the *Byrsopides* and *Cossonidae*, but the insect preserves unchanged all the essential characters of the Cryptorhynch type of *Curculionidae*."

These details were repeated by LeConte and Horn in their 1883 monograph (p. 487-488).

In *Biologia Centrali-Americana* (1909:1), Champion described 3 new genera in this group (*Acamptopsis*, with a 5-segmented antennal funicle; *Pseudacamptus*, with a 6-segmented funicle; *Choerorrhynchus*, with a 7-segmented funicle), and he called the cluster "Group Acamptina" of the subfamily Curculioninae. He gave a key to the 4 genera then recognized. Although he included the group in his last section of the Cryptorhynchinae, he remarked upon its affinity with the Cossoninae, and he said that "they seem to me to be best placed near the Cossonina and Trypetina". In a footnote, Champion called attention to the fact that *Paracamptus* Casey and *Acamptoides* Champion have complete pectoral canals and bilobed third tarsal segments and do not belong to the Acamptini. Champion characterized the Acamptini as follows:

"The 'Acamptina' have the rostrum stout and deflexed, its basal portion received in a deep groove in the prosternum and its apex resting on the narrowly separated anterior coxae; the prothorax projecting over the head anteriorly; the third tarsal joint simple; the funiculus 5-, 6-, or 7-jointed; and the body more or less setose and lutose."

Other characters of fundamental importance that have not previously appeared in literature are the long rectal loop sclerotization and the row of sclerolepidia along each metepisternum which are characteristic of most Cossoninae.

In 1916:519, Blatchley and Leng followed Champion's suggestion, and they included the group as "Tribe Acamptini" of the Cossoninae. In 1920:333, Leng placed the Acamptini as the first tribe of the Cossoninae in his catalog of North American Coleoptera.

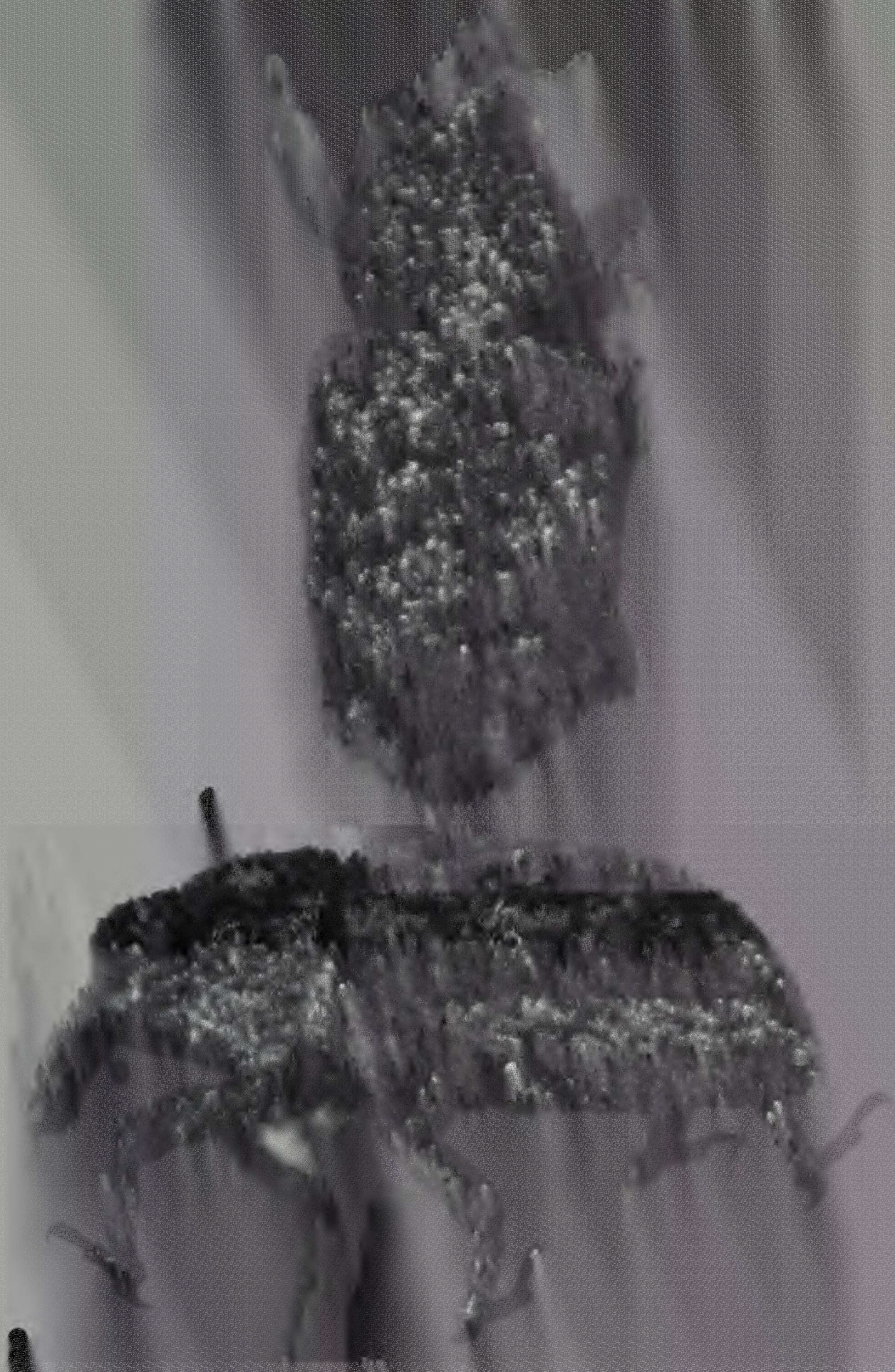


Fig. 1-2. Dorsal and lateral aspects of a female of *Agrostis (Agrostis) ...*

In 1929a:512-514, Hustache described *Paracamptopsis* as a new genus containing 2 species from Mt. Kenya, Africa. He elevated the group to subfamily status and placed it next in front of the Cryptorhynchinae in his report. Hustache was not, however, dealing with African representatives of the Acamptini, because *Paracamptopsis* and *Acamptus* belong to different groups. Inexplicably, in the same paper (1929a:466), Hustache described in the Rhyparosominae a new species, *laeviceps*, from Kilimandjaro, which he wrongly assigned to *Microcopes* Faust, whereas it is an ally of his *Paracamptopsis*. In 1953:119, Sir Guy Marshall transferred the species to *Gethen* Marshall.

In 1936, Csiki treated the Acamptini as the first tribe of the Cossoninae in *Coleopterorum Catalogus*. Also in 1936, Hustache, in the Cryptorhynchinae volume of *Coleopterorum Catalogus*, included the group as the first tribe of the Cryptorhynchinae. Hustache said that although the Acamptini had already been reported on in the Cossoninae volume of the *Catalogus*, they were better placed with the Cryptorhynchinae. Hustache evidently overlooked Champion's 1909 comments regarding *Paracamptus* Casey and *Acamptoides* Champion, and he erroneously included those 2 genera in the Acamptini instead of placing them with the Cryptorhynchinae where they belong. Casey originally noted the association of his *Paracamptus* with *Lembodes* in the Cryptorhynchinae.

In 1952, Anderson reported upon his study of the larvae of "several species" of *Acamptus*, and he concluded that they are definitely cossonine. Anderson treated the group as tribe Acamptini of the Cossoninae, and he concluded his studies with the following remarks (1952:288):

"*Acamptus* was originally placed by LeConte (1876, p. 238) in the Cryptorhynchini, near the Ithypori. Champion (1910), after studying genera which he considered clearly related to *Acamptus*, transferred the genus to the Cossoninae. More recently Hustache (1936) and Voss (1947) have referred the genus to the subfamily Cryptorhynchinae, tribe Ithyporini, subtribe Acamptina. Unfortunately close relatives of *Acamptus* are not shown in the larval stage. Therefore conclusions based on larval characters must be considered tentative. However, none of the genera of the true Ithyporini available for study (*Conotrachelus*, *Aeatus*, *Chalcodermus* and *Rhyssomatus*) has larvae which have the subtriangular labrum, the mandible with a differentiated, ridged area on the inner surface, nor the anterolateral setae on the epipharynx arranged as in *Acamptus*, all characteristics held in common with one or more genera in the true Cossoninae. The general appearance of the larva of *Acamptus* is typical of the Cossoninae as is its communal biology. The majority of cossonines . . . live in colonies in the host. All stages of a species will be found together, adults living and breeding entirely within the wood as long as the latter furnishes sufficient nutriment. No species of the ithyporine genera known have a similar biology, there being no evidence of community life. In view of these considerations *Acamptus* has been continued in the Cossoninae."

Kissinger, in his work on the genera of Curculionidae of North America (1964:10, 64), placed the Acamptini adjacent to the Ithyporini in the Cryptorhynchinae. He thus repeated the erroneous 1876 opinion of LeConte and Horn. Also, by including *Paracamptus* Casey, Kissinger's "Acamptini" is a mixture containing both Cossoninae and Cryptorhynchinae.

As listed in the Cryptorhynchinae part of *Coleopterorum Catalogus* in

1936, the Acamptini is a compound assemblage of 2 tribes of Cossoninae and a tribe of Cryptorhynchinae. Seven genera are listed by Hustache. Of these, *Acamptoides* Champion and *Paracamptus* Casey belong to the Cryptorhynchinae. *Paracamptopsis* Hustache, although evidently cossonine, does not belong to the Acamptini; it belongs in association with *Gethen* Marshall and *Miopus* Marshall, and the problems associated with those names remain to be elucidated in another report. Thus, from the listing in *Coleopterorum Catalogus*, only *Acamptus* LeConte, *Acamptopsis* Champion, *Choerorrhynchus* Champion, and *Pseudacamptus* Champion belong to the Acamptini. I consider *Pseudacamptus* a synonym of *Acamptus*.

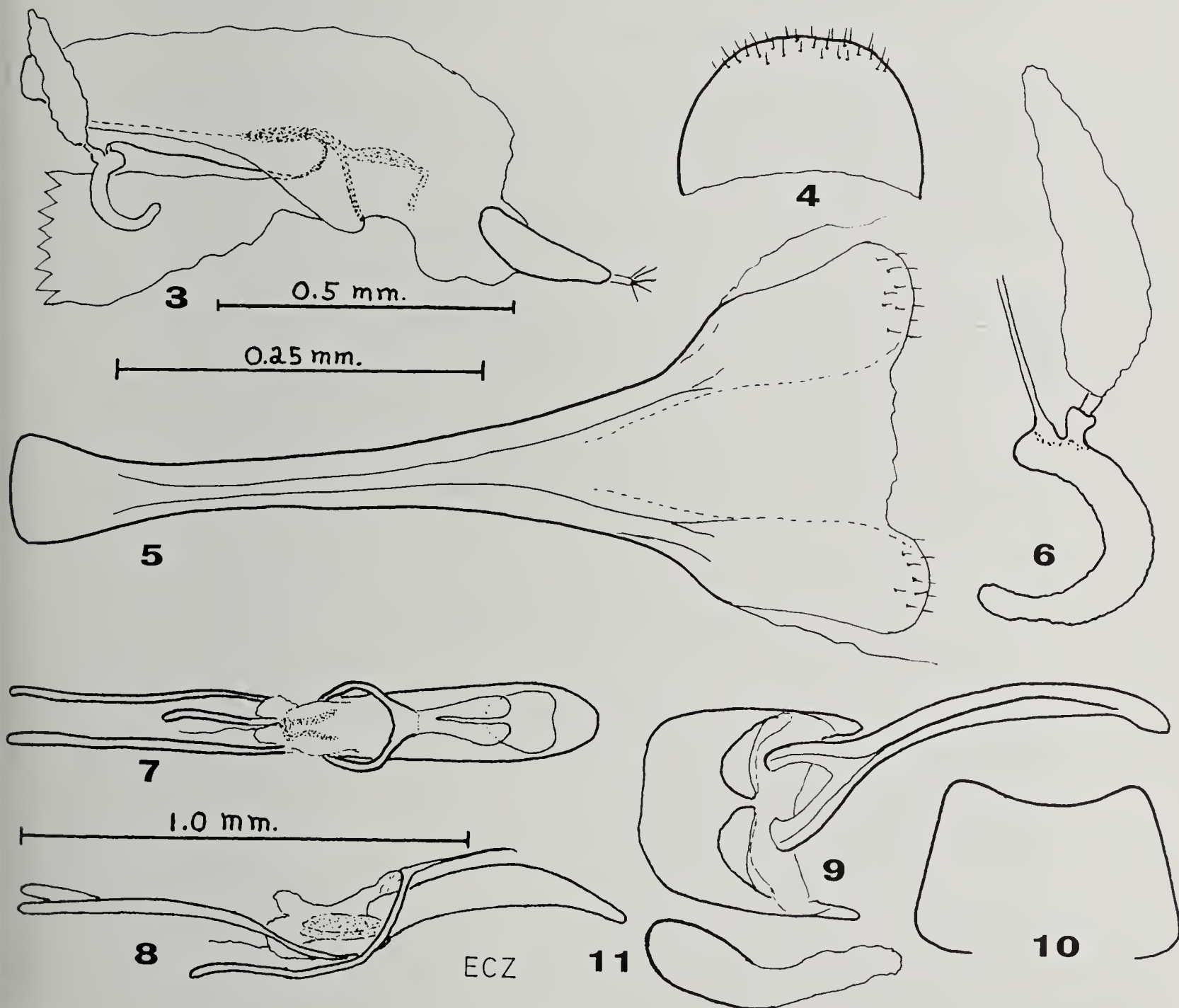


Fig. 3-11: Details of the male and female of *Acamptus cancellatus* (Marshall). 3-6, female: 3) genitalia, left lateral aspect; 4) eighth tergite, drawn to same scale as 3; 5) sclerotization of eighth sternite; 6) spermatheca, drawn to same scale as 5. 7-11, details of the male and drawn to the same scale as the bar between Fig. 7 and 8: 7) 8) dorsal and left lateral aspects of aedeagus with tegumen (note the development of the parameres); 9) ventral aspect of tergite 8 with the divided sternite 8 and sternite 9 attached; 10) dorsal aspect of tergite 7 (pygidium); 11) rectal loop.

In 1947, Voss described *Anchacamptus* from Colombia, and he incorrectly assigned it to the Acamptini (which he treated as a subtribe of the Ithyporini of the Cryptorhynchinae). *Anchacamptus* not only does not belong to the Acamptini, it does not belong to the subfamily Cossinae. It belongs to the Cryptorhynchinae in association with such genera as *Acamptoides*, *Paracamptus*, and *Lembodes*. It has no sclerolepidia along the metepisternal suture as is typical of the Cossinae. It does have a sclerotized rectal loop and developed male genital parameres, and these characters are shared by various Cossinae and Cryptorhynchinae.

KEY TO THE GENERA OF ACAMPTINI

1. Antennal funicle only 5-segmented; rostrum stout, its greatest subapical breadth as viewed from above more than one-half as broad as the total length of rostrum to margin of eye as seen from side..... *Acamptopsis* Champion
- 1'. Antennal funicle 6- or 7-segmented; rostrum more slender, its greatest subapical breadth as seen from above less than one-half the length of rostrum in front of eyes as seen from side 2
2. Basal half of antennal club densely setose; abdominal ventrites 3 and 4 very short, together only about one-third the length of 5 along medial line; antennal funicle 7-segmented in known species..... *Choerorrhynchus* Champion
- 2'. Basal half of antennal club bare and shiny; abdominal ventrite 3 plus 4 more than one-half as long as 5 along medial line; antennal funicle either 6- or 7-segmented..... *Acamptus* LeConte

LIST OF THE ACAMPTINI

Genus ACAMPTOPSIS Champion

Acamptopsis Champion, 1902:2. Type-species: *Acamptus encaustus* Champion, by original designation.

Acamptopsis cubanus Champion.

Acamptopsis cubanus Champion, 1909:2.

Cuba (type locality: Cayamas).

Acamptopsis encaustus Champion.

Acamptopsis encaustus Champion, 1909:2, pl. 1, fig. 1a-c.

Acamptopsis encanotus, misspelling by Hustache, 1936:5.

Panama (type locality: Volcan de Chiriqui, 3,000 feet).

Genus CHOERORRHYNCHUS Champion

Choerorrhynchus Champion, 1909:3. Type-species: *Choerorrhynchus tenuitarsis* Champion, by monotypy and original designation.

Choerorrhynchus tenuitarsis Champion.

Choerorrhynchus tenuitarsis Champion, 1909:3, pl. 1, fig. 2a-c.

Panama (type locality: Volcan de Chiriqui, 3,000 feet).

Genus ACAMPTUS LeConte

Acamptus LeConte, 1876:238. Type-species: *Acamptus rigidus* LeConte, by monotypy. Casey, 1892:445. Blatchley and Leng, 1916:519. Hustache, 1929b:177; 1932:77(329).

Pseudacamptus Champion, 1909:3. Type-species: *Pseudacamptus plurisetosus* Champion, by monotypy and original designation. **New synonym.**

Glyphostethus Marshall, 1921:596. Type-species: *Glyphostethus cancellatus* Marshall, by monotypy and original designation. **New synonym.** Anderson, 1952:286, fig. 19, larva.

Pseudacamptus was separated from *Acamptus* because of the difference in number of funicular segments in the antennae, but in *Acamptus* the number varies from 6 to 7. The number of segments is not of generic value in *Acamptus*. *Glyphostethus* is a simple synonym. Its author was confused by finding the type-species in a fauna foreign to the tribe, and this could mislead almost any taxonomist.

When I began this study in 1943, I had an invaluable exchange of correspondence with the late L. L. Buchanan (a careful worker and an astute observer) regarding *Acamptus* material in the United States National Museum, and I believe that details from his letter of 1 December 1943 are worthy of inclusion here:

"I have your letter of October 29 concerning the status of *Acamptus rigidus* LeConte and *A. echinus* Casey and their generic placement. Several years ago, in attempting to identify a few *Acamptus* specimens, I encountered a puzzling and contradictory situation, and I believe your inquiries can best be answered by giving you a rough summary of notes I made at that time.

"*A. rigidus* was described from "South Carolina to Texas" and as having a 6-jointed funicle. I have not examined LeConte's type specimen, but our collection contains examples of *Acamptus* from South Carolina and Texas, as well as from all the coastal states between and including Maryland to Texas; also, from the District of Columbia, West Virginia, and Arkansas. All these specimens have a 6-jointed funicle, and there is scarcely any doubt that LeConte was correct as to the antennal structure of *rigidus*. The above-mentioned eastern United States specimens, however, represent several forms, - species or geographical races or perhaps both. I was unable to settle this point satisfactorily.

[I have examined LeConte's material at the Museum of Comparative Zoology at Harvard. It is a mixed series containing specimens with both 6 and 7-segmented antennal funicles. The type (lectotype) of *rigidus* has a 7-segmented antennal funicle, and thus LeConte was incorrect in stating that the number is 6.]

"Casey, therefore, was mistaken (unless the antenna of LeConte's type proves to be not as originally described, a very unlikely thing, for reasons given) in saying (1892, p. 446) that the funicle of *A. rigidus* is 7-jointed; though Casey was correct in describing the funicle of his *A. echinus* as 7-jointed. [As noted above, LeConte was wrong and Casey was right in describing the antennal funicle of *rigidus*.] Later, Casey changed his mind (1895, p. 837) about the type locality of *echinus*, stating that the species

probably came from Arizona instead of New York. Here again Casey probably was wrong, as we have at least one specimen, agreeing perfectly with *echinus*, from New York; furthermore, all Arizona specimens at hand have a 6-jointed funicle and represent an undescribed species (unless they belong to Champion's *Pseudacamptus plurisetosus* from Mexico).

"In addition to the New York specimens of *echinus*, the Museum collection contains specimens with 7-jointed funicles from Ontario, Illinois, Nebraska, and Kansas. These are a little smaller than *echinus* specimens and do not agree exactly among themselves, and may represent one or two geographic races of *echinus*. The whole *Acamptus* problem obviously is much more complex than is indicated by the few names and localities recorded in literature.

"As to the number of genera involved, I believe that everything mentioned above (*rigidus*, *echinus*, etc.) belongs to a single genus, *Acamptus*, the number of funicular segments being, on this conclusion, of less than generic importance.

"Please feel free to use any of this information. There is little likelihood that I will get back to *Acamptus*. . . ."

In 1954, Sleeper described 1 of the forms studied by Buchanan as *Pseudacamptus texanus*. Sleeper borrowed part of the *Acamptini* from the United States National Museum (including the material referred to in Buchanan's letter quoted above), and it was returned with labels indicating that Sleeper had divided it into 6 "species" of "*Pseudacamptus*", including *texanus* and 5 forms on which there are name labels that appear to be unpublished manuscript species names. Excepting for the Arizona form studied by Buchanan and mentioned by him in the letter quoted just above, it appears that the other segregates on which Sleeper has placed species name labels are forms of his variable *texanus*, and that they do not represent distinct species.

The colonial, geographic, and individual morphological variability of *Acamptus* species is confusing, and it will require much work to provide an adequate taxonomic treatment of the group. That task must be left for a careful taxonomist who may in the future assemble an extensive collection of specimens. I have noted, in the limited studied material, the same reared series contains forms so distinctive that, on first sight, I considered them different species. One must treat this group with utmost caution if one does not wish to encumber the literature with synonymous names.

Acamptus breed in dead wood and under the dead bark of a variety of trees, such as *Carya*, *Hibiscus*, *Liquidambar*, *Persea*, *Platanus*, *Salix* etc., in the characteristic manner of the *Cossoninae*. They have been found to be locally abundant in some areas, although it appears that they are not often taken by collectors. The adults are obscure insects and may easily be mistaken for bits of bark or rotten wood.

Acamptus cancellatus (Marshall), **new combination** (fig. 1-11).

Glyphostethus cancellatus Marshall, 1921:596. 1931:323.

This is a Central or South American species that has been accidentally introduced to Samoa (Tutuila and Upolu) and to Fiji (Vanua Levu) (type locality: Apia, Upolu, Samoa). The holotype (in the British Museum) is

so badly abraded that it presents a false impression of the species. As noted above, I found only one specimen of this species (beneath the rotting bark of *Hibiscus tiliaceus*) during my 1940 Samoan expedition.

Acamptus echinus Casey.

Acamptus echinus Casey, 1892:445; 1895:837. Blatchley and Leng, 1916:520.

North America (New York to Ontario, Illinois, Kansas, Nebraska) (type locality: New York State). The status and extent of the distribution of this form remains to be clarified. As noted above in the quotation from the Buchanan letter, Casey seemed unsure of the type locality of *echinus*.

Acamptus interstitialis (Chevrolat).

Cryptorhynchus interstitialis Chevrolat, 1880:253.

Acamptus interstitialis (Chevrolat) Hustache, 1932:77.

Cryptorhynchus orthodoxus Chevrolat, 1880:253. Synonymy by Hustache, 1932:77.

Guadeloupe (type locality "Guadulpia").

Acamptus plurisetosus (Champion), **new combination**.

Pseudacamptus plurisetosus Champion, 1909:3, pl. 3, fig. 2a-c.

Mexico (type locality: "Sierra de Durango"). As noted by Champion, the originally unique holotype has much stouter setae than does *Acamptus rigidus*, and the elytral setae are not confined to the alternate intervals as they are on *rigidus* and *echinus*, for example.

Acamptus rigidus LeConte.

Acamptus rigidus LeConte, 1876:239. Champion, 1909:3. Blatchley and Leng, 1916:519. Wickham, 1896:123, pl. 4, fig. 6 (not pl. 5, fig. 5 as cited in Hustache, 1936:5), biology.

Eastern North America (type locality: not cited by LeConte but here designated as South Carolina). The LeConte series is compound and does not have a clearly designated holotype. I hereby designate as lectotype, and, with the assistance of John Lawrence, have so labeled the specimen which carries the principal name label and the locality label "S.C." [South Carolina] in the LeConte collection in the Museum of Comparative Zoology at Harvard University.

Acamptus texanus (Sleeper), **new combination**.

Pseudacamptus texanus Sleeper, 1954:185.

North America (type locality: Colorado County, Texas).

Acamptus verrucosus Voss.

Acamptus verrucosus Voss, 1947:51.

South America, Colombia (type locality: Medellin).

ACKNOWLEDGMENTS

I am indebted to John Lawrence for information regarding specimens in the Museum of Comparative Zoology, Harvard University; Rose Ella Warner for the loan of material from the United States National Museum; and Horace Burke for specimens reared by him and from the collection of the Texas A. and M. University, College Station, Texas.

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